

REMARKS

In response to the non-Final Office action of June 4, 2010, Applicants hereby amend claims 9-12 and 14. No new matter has been added. In the Office Action, the Examiner: (i) rejected claim 14 under 35 U.S.C. 101 as directed to non-statutory subject matter; and (ii) rejected claims 1-14 under 35 U.S.C 103 as being unpatentable over U.S. Patent 5,619,268 (Kobayashi) in view of U.S. Patent 5,398,068 (Liu). Applicants respectfully traverse, submitting that the claims are allowable over the cited art for at least the reasons submitted below. Reconsideration is respectfully requested.

I. In the Office action, the Examiner rejected claim 14 as directed to non-statutory subject matter. Applicants hereby amend claim 14 to recite "A computer program product, comprising a computer usable medium having a computer readable program code embodied therein, said computer readable program code adapted to be executed to implement a method to convert a first motion vector field into a second motion vector field by determining a first one of the motion vectors of the second motion vector field, the first motion vector field being computed, on basis of a first image and a second image of a sequence of images, for a temporal position between the first image and the second image, the method comprising:". Such subject matter has been recognized as patentable, for example, by the BPAI in *Ex parte Bo Li*, Appeal 2008-1213 (BPAI 2008). Applicants therefore respectfully submit that claim 14 as amended recites patentable subject matter, and the rejection under 35 U.S.C. 101 should be withdrawn.

II. The examiner rejected claims 1-14 under 35 U.S.C 103 as being unpatentable over U.S. Patent 5,619,268 (Kobayashi) in view of U.S. Patent 5,398,068 (Liu).

The present application describes refinement of motion vector fields that may be beneficial to track relatively small relatively fast moving objects. For example, in one potential implementation, a first vector field may provide incorrect motion vectors

because an object smaller than a block size with a velocity larger than the sample distance of the motion vector grid is simply missed during creation of the first vector field. The first vector field of this potential implementation may be corrected by identifying un-referenced pixels ("pixels in the original input images that do not contribute to the motion compensated output image"... See e.g. Application paragraph 16) in the first and second images, where "the first motion vector field does not compromise respective motion vectors (i.e. the motion vector from the first group of unreferenced pixels to the second group of unreferenced pixels is not the motion vector that applies to those groups of pixels from the first motion vector field).

Claim 1 recites a method of converting such a first motion vector field into a second motion vector field. The second motion vector field is created from the first vector field by accounting for relatively small relatively fast moving objects. "A first one of the motion vectors of the second motion vector field" may be a vector for such a relatively small relatively fast moving objects that may have been missed in the creation of a first vector field. This problem is described in paragraph 9 of the present application.

Claim 1 recites "a first group of un-referenced pixels in the first image", "a second group of un-referenced pixels in the second image". On page 4 of the Office action, the Examiner states that this element is not found in Kobayashi. The Examiner states on page 5 of the Office action, that this is shown by Liu in, for example, Fig. 14 which discloses non-selected pixels. The Examiner states that these non-selected pixels are 'un-referenced pixels' because they are not used for motion vector estimation. However, in claim 1, the first and second group of un-referenced pixels are specifically used to create a candidate motion vector, "which is oriented from the first group of un-referenced pixels to the second group of un-referenced pixels". Therefore, the non-selected pixels of Liu are completely different than the "un-referenced" pixels of claim 1. As described above, un-referenced pixels as described by the present application are

pixels which do not contribute to a motion compensated output image. One potential non-exclusive example of un-referenced pixels are pixels that are occluded, or blocked by an object in the foreground. This is completely different than the non-selected pixels of Liu.

There is no teaching or suggestion in Kobayashi or Liu of specifically using un-referenced pixels that are mutually connected to modify a first vector field to create a second vector field.

Therefore, since neither Kobayashi nor Liu teach or suggest all of the recitations of claim 1, Applicants respectfully submit that claim 1 is allowable over the cited art. Similarly, claims 9, 10, and 14 include recitations similar to those of claim 1, and claims 2-8 and 11-13 depend from the above independent claims, and are therefore allowable over the cited art for the same reasons discussed above for claim 1.

Conclusory Remarks

In view of the above, it is respectfully submitted that claims 1-19 as amended are allowable over the cited art.

The Examiner is encouraged to call Applicants' attorney at the number below if doing so will in any way advance prosecution of this application.

The Commissioner is hereby authorized to charge any fees which may be required, or credit in the overpayment, to Deposit Account No. **07-1896** referencing Attorney Docket No. **348162-982800**.

Respectfully submitted,

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